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Introduction

Thank you for purchasing the *Action*tec 54Mbps Wireless Access Point. This Wireless Access Point is easy to use and easy to setup. If you like the freedom of accessing your network from anywhere within your home or office, then take your networking to the next level with the *Action*tec 54Mbps Wireless Access Point. You will be able to have full access to your network and share files, printers, and even your High-Speed Internet access.

Package Contents

Make sure the following items came in this package:

- *Action*tec 54Mbps Wireless Access Point and power adapter
- Accessories bag (lugs, screws, etc...)
- This User's Manual and Quick Start Installation Guide

Minimum System Requirements

- PC Computer with an Ethernet Adapter configured for TCP/IP.
- Internet Browser (Microsoft Explorer, Netscape Navigator, etc..).
- Microsoft Windows XP, 2000/Windows Millennium Edition, Windows 98 Second Edition (SE), Windows NT 4.0

Contacting Technical Support

*Action*tec Electronics prides itself on making high-quality, durable, high-performance products. If you should need assistance, the *Action*tec Technical Support Department is available 24 Hours a Day, 7 Days a Week to provide professional support.

U.S. Contact:

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Sunnyvale, CA 94085

Phone: 1-888-436-0657
E-mail: techsupp@actiontec.com

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UK RG7 4AB

Tech Support: 0845 65 80411
E-mail: eurosupport@actiontec.com

Introduction to Wireless Networks

A wireless network connects computers to each other using radiotechnology which allows you the freedom to move around the area and work anywhere within reach of an Access Point.

The *Action*tec 54Mbps Wireless Access Point supports the 802.11g wireless LAN protocol and is backward compatible with 802.11b. The Access Point can be connected to a wired network to allow communication between the wired network and computers using *Action*tec 54 Mbps Wireless Wireless PC Cards. The technology is an extension to the existing Ethernet networking standard, so you can connect the *Action*tec 54 Mbps Wireless Access Point to an existing Ethernet network.

Adding Access Points to your network

Placement and connection of the *Action*tec 54 Mbps Wireless Access Point depends entirely on your specific (network) environment. The *Action*tec 54 Mbps Wireless Access Point can be used for the following configurations:

- Creating a wireless network.
- Extending an existing wireless network.
- Connecting to a single computer.

Creating a wireless network

Your *Action*tec 54 Mbps Wireless Access Point can be used to setup a wireless network as shown on figure 1. Follow the steps below to create a wireless network.

Figure 1. Creating a Wireless Network

Note: Refer to the appropriate user manual for successful installation of your wireless network.

1. Prepare one computer that you will want to connect wirelessly. (Install wireless network card and software).
2. Configure the IP settings for this client computer.
3. Install the *Action*tec 54 Mbps Wireless Access Point.
4. Your 54 Mbps wireless network is now ready.
5. For further functionality and security, the *Action*tec 54 Mbps Wireless Access Point can be configured using any Web Broser.
6. Install other client computers if this is applicable to your environment.

Extending a wired network with one or more 54 Mbps Wireless Access Points

When the *Action*tec 54 Mbps Wireless Access Point is used as an extension to a wired network (figure 2), please make sure that the current wired network is completely functional.

Figure 2. Extending a Wired Network

Note: Refer to the appropriate user manual for successful installation of your wireless network.

Follow these steps to extend you wired network:

1. Install the *Action*tec 54 Mbps Wireless Access Point and connect it to your wired network.
2. You can now use the wireless network.
3. For further functionality and security, the *Action*tec 54 Mbps Wireless Access Point can be configured using any Web Browser.
4. Install the wireless client computer(s).

Connecting an Access Point directly to a computer

Your *Action*tec 54 Mbps Wireless Access Point can be connected directly to your computer as shown in figure 3.

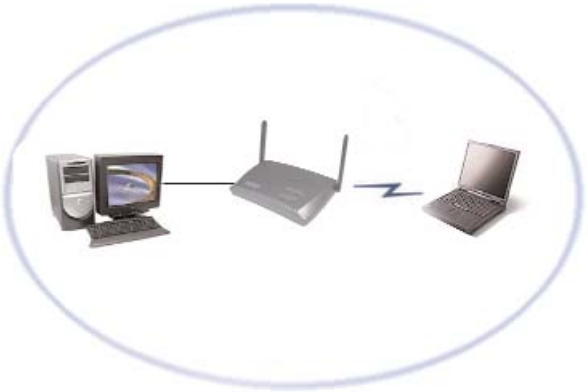


Figure 3. Connecting Directly to a Computer

Note: Refer to the appropriate user manual for successful installation of your wireless network.

Follow these steps to connect your *Action*tec 54 Mbps Wireless Access Point directly to your computer:

1. Install a network interface card (NIC) in the computer you want to connect the *Action*tec 54 Mbps Wireless Access Point to.
2. Configure the IP settings for this client.
3. Install the Access Point.

Note: For this connection you need to use a cross-over Ethernet cable.

4. You can now use the wireless network.
5. For further functionality and security, the *Action*tec 54 Mbps Wireless Access Point can be configured using the *Action*tec 54 Mbps Wireless Access Point Locator software utility and the Web Interface.
6. Install the wireless client computer(s).

Installing the *Action*tec 54 Mbps Wireless Access Point

This equipment is designed with utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electronic equipment. All guidelines of this manual and of the computer manufacturer must therefore be followed at all times to ensure the safe use of the equipment.

Physical installation of the *Action*tec 54 Mbps Wireless Wireless Access Point

For best performance, and range, the *Action*tec 54 Mbps Wireless Access point needs to be placed in a flat hoizontal position with the antennae extended up as shown in figure 4.

Figure 4 *Action*tec 54 Mbps Wireless Wireless Access Point

The *Action*tec 54 Mbps Wireless Access Point can be installed in 2 different ways:

On a desktop.

- Determine a clear area within your desktop where the *Action*tec 54 Mbps Wireless Access Point can be placed in a horizontal position clear of obstructions.

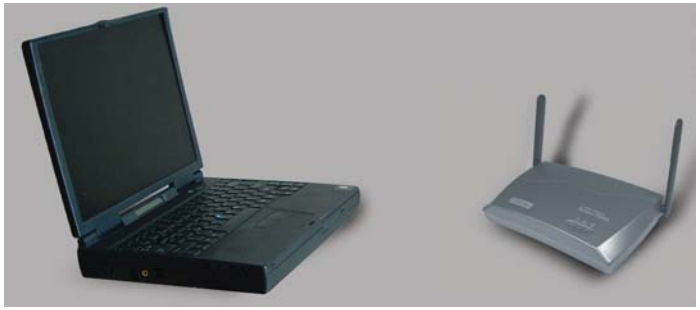


Figure 5. *Action*tec 54 Mbps Wireless Access Point on a desktop

Mounted on a wall.

Prior to drilling holes into a wall, make sure the wall area of interest is clear of electrical wiring or water pipes.

- Determine the position of the screws and mark with a pencil.
- Drill holes in the wall at the location of the marks.
- Insert plastic lugs into the holes
- Fasten the screws into the plastic lugs and make sure to leave a 3mm distance as clearance between the wall and screw heads.
- Mount the *Action*tec54 Mbps Wireless Access Point onto the screws.

Figure 6. *Action*tec 54 Mbps Wireless Access Point on a wall

Accessories such as screws and lugs to fasten the Access Point to a wall are provided in the Accessories bag.

Connecting the Access Point to a network

Now that your *Action*tec 54 Mbps Wireless Access Point has been installed, it is ready to be connected to the power outlet and to your wired network.

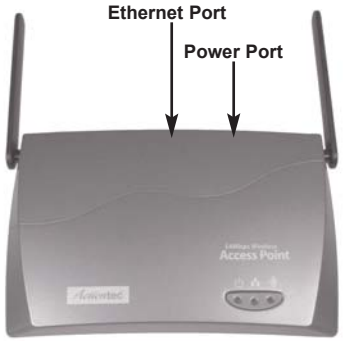
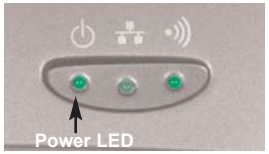


Figure 7 *Action*tec 54 Mbps Wireless Access Point connectors

1. Attach the power adapter output connector to the *Action*tec 54 Mbps Wireless Access Point and check the power LED to see if you are connected properly.



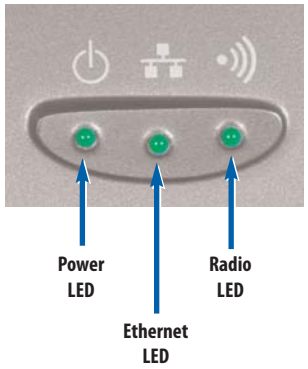
2. Identify the Ethernet port; this is located next to the power connector on the *Action*tec 802.11.Access Point.

3. Attach the Ethernet cable to the *Action*tec 54 Mbps Wireless Access Point and connect the cable on the other end to either a hub in the network, or a computer. Please see note below for proper connection.

- If the *Action*tec 54 Mbps Wireless Access Point is connected to a hub or switch, a 'cross-over' Ethernet cable must be used.
- If the *Action*tec 54 Mbps Wireless Access Point is connected directly to a computer, a 'straight' Ethernet cable must be used.

LEDs

There are three LEDs (Light emitting diodes) on the *Action*tec 54 Mbps Wireless Access Point. These visual aids can help you verify proper operation.



Power The power LED lights up when the Access Point is connected to a power source.

Network The network LED will blink when the Access Point is connected to a wired network

Radio The radio LED blinks when the Access Point is active.

Figure 7. *Action*tec 54 Mbps Wireless Access Point LEDs

Configuring the 54 Mbps Wireless Access Point

How to configure the *Action*tec 54 Mbps Wireless Access Point

Configuring the *Action*tec 54 Mbps Wireless Access Point means installing settings with respect to the use of radio channels, security, identification, etc. You only need to configure the *Action*tec 54 Mbps Wireless Access Point when you want to change these settings.

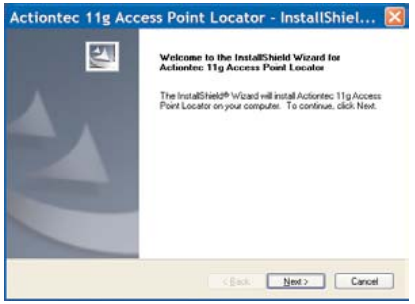
You can configure the *Action*tec 54 Mbps Wireless Access Point through the Access Pont Locator utlity provided in the Installation CD or via the Web Interface. Locator utlity provided in the Installation CD.

Starting the Access Point Locator Utility

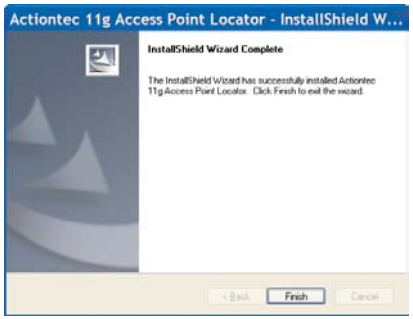
The Access Point Locator utility helps you identify and modify the IP values of the Access Point without launching the Web Interface.

1. Insert the Access Point Installation CD in your Computer's CD-ROM Drive, and close the drive tray, this will launch the installation process.
2. When the following screen appears, click on **Install Software** to continue.

3. When the following screen appears, click **Next** to continue.


Actiontec 11g Access Point Locator - InstallShiel...
Welcome to the InstallShield Wizard for Actiontec 11g Access Point Locator
The InstallShield® Wizard will install Actiontec 11g Access Point Locator on your computer. To continue, click Next.
< Back
Next >
Cancel

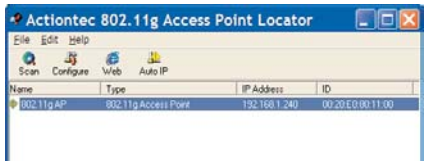
4. When the following screen appears, click **Finish** to continue.


Actiontec 11g Access Point Locator - InstallShield W...
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed Actiontec 11g Access Point Locator. Click Finish to exit the wizard.
Finish

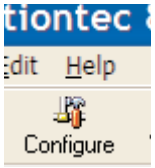
5. Once the Installation is complete, from the Windows Desktop click on the **Access Point Locator Icon.**

Note: The Access Point Locator allows the end user to identify the IP address of the Access Point as an aid to Adjusting the Access Point's network address values, we reccommend keeping the factory defaults.

6. The **Access Point Locator** will scan for any available Access Points and display their information.


Actiontec 802.11g Access Point Locator
File Edit Help
Scan Configure Web Auto IP
Name Type IP Address ID
802.11g AP 802.11g Access Point 192.168.1.240 00:20:E0:00:11:00

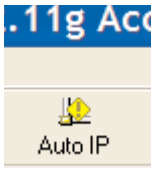
7. If you wish to change the factory defaul values, click on the configure icon.



Note: Make sure you record the current IP settings prior to changing the current configuration.

8. When the following screen appears, enter the appropriate values and click **Apply**.

9. If you are not sure of the IP addressvalues, you can click on the Auto IP Icon. This will configure the Access Point properly.



Note: Make sure you record the IP settings assigned by the Auto IP function. We reccommend keeping the factory defaults if you are not sure

10. Once completed, click on the **Internet Explorer Icon** on the Access Point Locator Window in order to adjust the Access Point Settings using the Web Interface

.

Note: The Access Point can also be adjusted manually by accessing it from any browser.

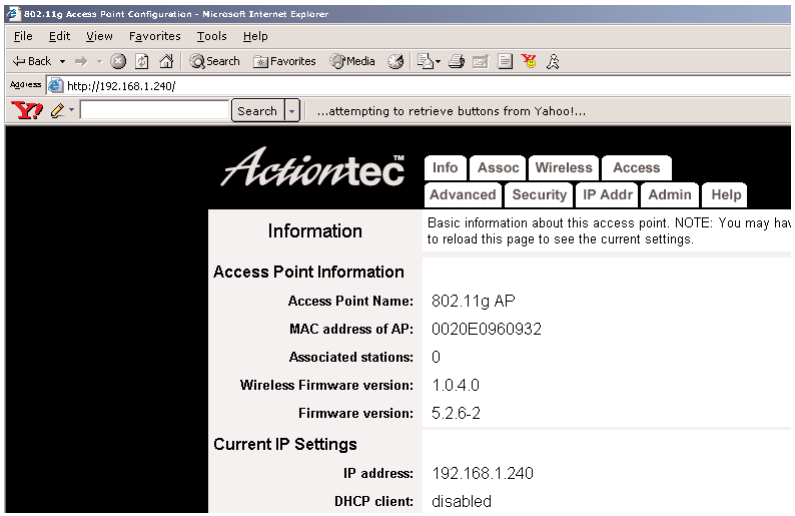
Starting the Web Interface

Once the *Action*tec 54 Mbps Wireless Access Point Configuration Utility has finished and the *Action*tec 54 Mbps Wireless Access Point is available for configuration in the network, configure it by using any Web Browser.

1. Launch the Web Browser and type the following address in the Address Field **http:\\192.168.1.240** , press Enter to continue.

2. Enter the **Username: Admin** and **Password: Admin** - Press **enter** to continue.

3. When the following screen appears, begin configuring your 54 Mbps Wireless Access Point.


802.11g Access Point Configuration - Microsoft Internet Explorer
File Edit View Favorites Tools Help
http://192.168.1.240/
Actiontec
Info Assoc Wireless Access
Advanced Security IP Addr Admin Help
Information
Basic information about this access point. NOTE: You may hav
to reload this page to see the current settings.
Access Point Information
Access Point Name: 802.11g AP
MAC address of AP: 0020E0960932
Associated stations: 0
Wireless Firmware version: 1.0.4.0
Firmware version: 5.2.6-2
Current IP Settings
IP address: 192.168.1.240
DHCP client: disabled

Web Interface Contents

The Web Interface application allows you to view and carry out setting changes for the *Action*tec 54 Mbps Wireless Access Point. Refer to this list when changing your *Action*tec 54 Mbps Wireless Access Point internal settings.

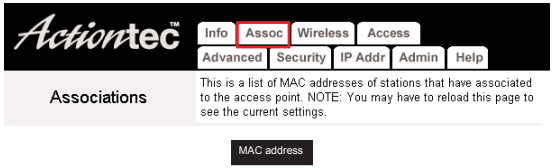
Info

This page contains information about the *Action*tec 54 Mbps Wireless Access Point.

- This is the Initial Page on the 54 Mbps Wireless Access Point.
- This is only an information screen and does not allow changes.

Associations

To access the associations page, click on the "Assoc" tab. Here you can verify the devices that are currently connected to your 54 Mbps Wireless Access Point. The associated device's MAC (Media Access Control) address will be displayed inside the green MAC Address field.


Actiontec
Info Assoc Wireless Access
Advanced Security IP Addr Admin Help
Associations
This is a list of MAC addresses of stations that have associated to the access point. NOTE: You may have to reload this page to see the current settings.
MAC address

Wireless

Here you can install items such as the Performance Mode, identification of the device, radio channel to be used as well as the Transmition rate or data speed.

Actiontec
Info Assoc Wireless Access
Advanced Security IP Addr Admin Help
Wireless Configuration
On this page you can configure the basic 802.11g access point settings. Any new settings will not take effect until the access point is rebooted.

- **Visibility Status:** When invisibility is selected, the Access Point will be protected against its discovery from wireless "sniffer" programs. In order to connect to the Access Point, all wireless clients must use the Access Point's designated SSID value.

- **Phy Profiles Mode:** There are five options you can choose from.
  - 802.11g onl: This option supports only 802.11g Products.
  - 802.11g Maximum Performance: This option configures the Access Point to only allow connectivity to 802.11g devices operating at a peak data rate of up to 54 Mbps. By selecting this performance mode, all 802.11b devices will be excluded. For increased performance, select "Short Preamble" from the Advanced page.
  - Maximum Interoperability using 802.11 b/g Mixed Mode: This option configures the Access Point to allow automatic detection of 802.11b and 802.11g devices connected to the wireless network.

    By selecting this performance mode, all devices wirelessly linked to the Access Point will operate at reduced data rates than those while operating in their respective native protocol.
  - 802.11 b/g Mixed Mode Long: A Long Preamble provides universal compatability for devices connecting to the Access Point.
  - 802.11b only: Reduces all traffice to 802.11b standards of 11 Mbps.

- **Wireless Network Name (SSID):** This is the name of the Access Point on the wireless network. Client devices associated to this network may need to know this name. The default Wireless Network Name (SSID) while using Maximum Interoperability mode is: *Action*tec.

  The default Wireless Network Name (SSID) while using Maximum Performance mode is: Actiontec (Uppercase A, and lower case ctiontec). This is necessary in order to enable 802.11g 54Mbps operation.

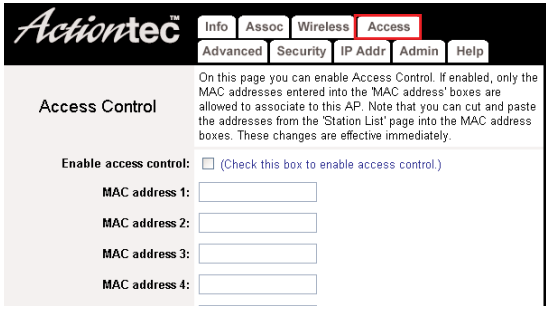
- **Channel:** This is the radio channel that the Access Point will operate on, if you experience interference you may need to try different channels. Available channels are separated by frequencies, channels 1-11 operate at 2.4GHz.

- **Transmission rate (Mbits/s):** This is the speed at which the Access Point will transmit data. Normally, you should select "Best" as your trasmission rate. You may select a low or high fixed trasmit rate if your network is unusually noisy or quiet.

When completed with changes in the Wireless Page, click on "Save" to make the changes on the Access Point.

Access

In order to protect against unauthorized network access the Access Point can allow Access to devices that are only registered within the Access Control page. By selecting "Enable access control:", access will be granted only to devices that are registered in the MAC address list. To register a device on the Access Control page, enter the MAC (Media Access Control) address for each device to be associated in the MAC Address field. Access Control is enforced immediately after the address has been entered.


Actiontec
Info
Assoc
Wireless
Access
Advanced
Security
IP Addr
Admin
Help
Access Control
On this page you can enable Access Control. If enabled, only the MAC addresses entered into the 'MAC address' boxes are allowed to associate to this AP. Note that you can cut and paste the addresses from the 'Station List' page into the MAC address boxes. These changes are effective immediately.
Enable access control:
(Check this box to enable access control.)
MAC address 1:
MAC address 2:
MAC address 3:
MAC address 4:

Advanced

This page allows configuration of the advanced settings within the Access Point. Wireless network performance can be enhanced by finding the best setting for your environment.
Each advanced feature must be manually set.

- **Maximum associated stations:** This field is used to specify the number of associated wireless devices at any given time.

  The number of associated devices at any given time range from 0 to 235.

- **Fragmentation threshold:** Use this field to specify the maximimum data packet size for wireless transmitions to and by the Access Point. Packet data will be fragmented to the specified size to maintain performance in a noisy network..

- **RTS threshold:** Use this field to specify the maximimum data packet size before using the RTS/CTS. This is usefull to maintain performance in a noisy network environment or to prevent hidden nodes from degrading overall network performance.

- **Beacon Period:** Beacons are sent out by the access point in order to alert wireless client devices of its current status. These beacons are sent at intervals measured in miliseconds. The value you choose may affect the wireless network's performance.

- **DTIM Period:** Delevery Traffic Infomation Message provides wireless client devices information on the actual traffic within the wireless network. This information is delivered in intervals that are set based on the number of beacons. Therefore, if the DTIM period is 1, a DTIM will be transmitted every time there is a beacon. If the DTIM period is 2, a DTIM will be transmitted every two beacon tranmissions.

- **Maximum Burst Time:** This is also known as PRISM Nitro™ technology. The technology uses standard-compliant methods to eliminate collisions in mixed-mode networks, while greatly increasing the performance of both pure 802.11g and mixed 802.11b/g networks. The setting is for the amount of time the radio will be resurped to send data without requiring an ACK. This number is in units of microseconds. A typical value would be 1000 microseconds. When this number is zero, bursting is disabled.

- **Enable PSM Buffer:** This option enables support for the stations that are in power save mode.

Once you adjust the settings, click on save and reboot the Access Point.

Security

In order to protect against unauthorized network access, strong encryption and authentication can be enabled to further enhance security. This page allows you set the security and ecryption options for the Access Point.

- **WEP Configuration:** WEP is the wireless encryption standard implemented in the Access Point. To use it, a client device must provide a key that will be

autheticated by the Access Point.

Keys are classified by their size, 64 bit, and 128 bit and should be 10 characters long.

- Enable WEP: Check the Enable WEP box to enable it and set Authentication to "Shared key".
- WEP key lenghts: Select the appropriate WEP key lenght by clicking on the arrow, the selected length applies to all keys.
- WEP key 1 - 4 : Enter sequence of leters and numbers (0-9, A-F) to be used as a WEP key. You can set up to four different WEP keys.

  For example, a 64 Bit key would be "012FC493E1".
- Default WEP key to use: Select the Default WEP key to be used by clicking on the arrow. Data transmissions will always be encrypted using the default key. The other keys can only be use to decrypt received data.
- Authentication: There are three methods to authenticate a client to the access point, Open, Shared Key or Both.

  - Open- allows anyone to authenticate to the access point.
  - Shared Key- allows only stations that know the keys to authenticate.
  - Both- allows a station to use either mode.

IP Addr

Here you can configure the IP address used by the Web and TFTP servers running on the Access Point, you can specifiy whether you are using a Static IP or are using a DCHP address provided by a server in your network. These options will not go into effect until the Access Point is rebooted.

- **IP Address Mode:** Click on the option better suited for your needs.
  - Static: Check this box to use the IP settings specified on this page.
  - DHCP: Check this box to use the IP settings specified by a DHCP server on your network.
- **Default IP Address:** Enter the IP address for the access point.
- **Default Subnet Mask:** Enter the subnet mask address, this specifies the number portion of an IP address. The default value for the access point is: 255.255.255.0.
- **Default Gateway:** Enter the IP address for the gateway that connects you to the Internet.

- **Access Point Name:** This is the name that the access point will use to identify itself to external configuration and Access Point Locator. This is not the same as the SSID. If you are not using any programs like those mentioned, you can leave it blank.

Once you adjust the settings, click on save and reboot the Access Point.

Admin

Here you can change the password, reboot the access point, or rest all settings to their factory default values. The default password is: **Admin**

You must reboot the access point if any sestting have been changed.

- **User name:** This is the user name you must type to gain access to the acces point and make changes to these pages. The default Username is: **Admin**
- **Administrator Password:** This is the password you must type to gain access to the access point and make changes to these pages. You must enter the same password in both entry fields. The default Password is: **Admin**

Once you adjust the settings, click on save and reboot the Access Point.

- **Reboot Access Point:** By clicking on Reboot, you will perform a soft restart of the access point.
- **Reset to factory defaults:** By clicking on Reset, you will reset the access point to its original factory values.
- **Upgrade Firmware:** Select the Browse button to select the new firmware firle that you downloaded from the *Action*tec Technical Support website. Once you have selected the file, click "Upload". (Note: The firmware upgrade process can take up to 60 seconds.)

Help

We are constantly working to breing you better products and solutions. This section will contain infomation to help you get the most out of your Actiontec 54 Mbps Wireless Access Point.

Troubleshooting

The *Action*tec 54 Mbps Wireless Access Point is a reliable device and its designed to operate
unattended. We have recognized some of the potential problems that may arise during setup and installation, therefore; we have compiled a set of solutions to the most common problems. These answer will help you in achieving a flawless operation of the device.

Possible Cause	**Solution**
Is the *Action*tec 54 Mbps Wireless Access Point powered up?	Check the power LED, Check if the access point is connected to an electrical source.
No link with the Wireless card in your computer.	Check the radio signal LED, Check for possible range problems.
Is there a Network connection?	Check the network LED, the Access Point may take up to a minute to find an IP Address it can use if Auto IP is used to assign an IP address.
Client cannot make connection.	A wireless client is not (yet) connected to the Access Point. Refer to the manual of the wireless client on how to connect.
Has the proper Network cable been used?	If the Access Point is connected to a hub, a 'cross-over' cable must be used If the Access Point is connected directly to a computer, a normal Ethernet cable must be used.
AP Locator does not find the Access Point.	Check the power plug and make sure it is properly connected.

Possible Cause	**Solution**
Your browser uses a proxy server to connect to the Web Interface.	Reconfigure proxy settings in your browser. In any browser, make sure you have st the browser to enable 'Bypass Proxy server for local address'

Frequentlly Asked Questions

How far can I be from the access point and maintain a connection?

- Range for this device varies on the environment.
  Indoors approximately. 50 meters (150 ft.) or more.
  Outdoors up to 300 meters (1000 ft.)

How fast is the Wireless Network?

- The rated throughput at optimal conditions is that of 54Mbps, this throughput does vary on distance from the access point and the amount of attenuation (physical barriers such as walls, glass, etc..) the signal must go through.

Can I connect a DSL or Cable Modem to it?

- Yes, provided the DSL or Cable modem have an Ethernet UTP connector.

Can I share the internet through the *Action*tec 54 Mbps Wireless Access Point?

- Yes, to accomplish this you need to set up your network as follows:
  1. Install a gateway.
  2. Connect the gateway to your internet connection.
  3. Connect the gateway to your Access Point.
  4. Install Wireless network cards in your clients.
  5. Configure the clients to connect to the Access Point and the gateway.

Does it provide roaming capabilities?

- Yes, when the *Action*tec 54 Mbps Wireless Access Point is used in conjunction with other Access Points as in the case of campuses, users can roam within the network provided all Access points are set correctly. Although the device allows roaming, it is not a signal repeater and is limited to the range between the Access Point and the client computer.

Does it provide network traffic filtering capabilities?

- No, the *Action*tec 54 Mbps Wireless Access Point is not an Integrated Access Device (IAD), for network traffic filtering capabilities a firewall or similar must be used.

Does it provide load balancing capabilities?

- No, the *Action*tec 54 Mbps Wireless Access Point is not designed to track the load on the network resources, this is just a data transport device.

How do I unlock the Access Point?

The *Action*tec 54 Mbps Wireless Access Point factory default settings that allow immediate access without configuration. The AP Locator utility has been provided for further configuring of the device, the *Action*tec 54 Mbps Wireless Access Point

can be locked to prevent changes to security and network access through Ap Locaor. The *Action*tec 54 Mbps Wireless Access Point can be unlocked either through the use of the AP Locator Utility or through hardware unlock feature.

The *Action*tec 54 Mbps Wireless Access Point unlock/reset button is found below the power connector and UTP (Ethernet) connector. It is a small red button.

How do I unlock the Access Point so I can reconfigure it?

- To unlock the Access Point so that the configuration changes are allowed again:

  1. Press the red button found below the power connector and UTP (Ethernet) connector briefly.

  2. The *Action*tec 54 Mbps Wireless Access Point lock is unlocked. All settings, including IP settings, are retained.

  3. You can now use the Web Interface to manage the Access Point again.

How do I reset the Access Point to its factory settings?

- If the reset button is pressed longer, more than 5 seconds, the *Action*tec 54 Mbps Wireless Access Point will be reset to the default factory settings:

  1. Press the red button found below the power connector and UTP (Ethernet) connector and keep it pressed down.

  2. The radio LED will first light up constantly.

  3. Release the reset button when the LED has stopped lighting.

  4. All settings are deleted.

  5. Use the KickStart utility to install new IP settings.(If you have a DHCP server the IP settings will probably remain the same.)

  6. You can now use the Web Interface to manage the Access Point again.

Can I launch the Web Interface Manually?

- If you know the IP address of the *Action*tec 54 Mbps Wireless Access Point, you can manually open the Web Interface in a web browser, just as you would any other web page.

  1. Open a web browser.

  2. Type in the web address of the *Action*tec 54 Mbps Wireless Access Point on the address bar as follows: http://IP address of the Access Point/

  3. You can bookmark the web address for the web Interface for easier access.

Regulatory Notices and Statements

Wireless LAN, Health and Authorization for use Radio frequency electromagnetic energy is emitted from Wireless LAN devices. The energy levels of these emissions however are far much less than the electromagnetic energy emissions from wireless devices like for example mobile phones. Wireless LAN devices are safe for use by consumers, because they operate within the guidelines found in radio frequency safety standards and recommendations. The use of Wireless LAN devices may be restricted in some situations or environments for example:

- On board of airplanes, or
- In an explosive environment, or
- In case the interference risk to other devices or services is perceived or identified as harmful.

In case the policy regarding the use of Wireless LAN devices in specific organizations or environments (e.g. airports, hospitals, chemical/oil/gas industrial plants, private buildings etc.) is not clear, please ask for authorization to use these devices prior to operating the equipment.

Regulatory Information/disclaimers

Installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.
The Manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution or attachment of connecting cables and equipment other than manufacturer specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment.
Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

USA-FCC (Federal Communications Commission) statement

This device complies with Part 15 of FCC Rules.
Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. this device must accept any interference, including interference that may cause un-desired operation of this device.

FCC Interference Statement

This device complies with Part 15 of FCC Rules., as well as ICES 003 B / NMB 003 B. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation. Modifications not expressly authorized by Actiontec Electronics may invalidate the user's right to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the distance between the equipment and the receiver.
3. Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

FCC Radio Frequency Exposure statement

This Wireless LAN radio device has been evaluated under FCC Bulletin OET 65C and found compliant to the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247 (b) (4) addressing RF Exposure from radio frequency devices.
The radiated output power of this Wireless LAN device is far below the FCC radio frequency exposure limits.
Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation is minimized. When using this device, a certain separation distance between antenna and nearby persons has to be kept to ensure RF exposure compliance. In order to comply with RF exposure limits established in the ANSI C95.1 standards, the distance between the antennas and the user should not be less than 20 cm (8 inches).

Export restrictions

This product or software contains encryption code which may not be exported or transferred from the US or Canada without an approved US Department of Commerce export license.

*Action*tec Electronics, Inc. Limited Warranty

Hardware: *Action*tec Electronics Inc. warrants to the end user ("Customer") that this hardware product will be free from defects in workmanship and materials, under normal use and service, for twelve (12) months from the date of purchase from *Action*tec Electronics or its authorized reseller.

*Action*tec Electronics' sole obligation under this express warranty shall be, at *Action*tec's option and expense, to repair the defective product or part, deliver to Customer an equivalent product or part to replace the defective item, or if neither of the two foregoing options is reasonably available, *Action*tec Electronics may, in its sole discretion, refund to Customer the purchase price paid for the defective product. All products that are replaced will become the property of *Action*tec Electronics Inc. Replacement products may be new or reconditioned. *Action*tec Electronics warrants any replaced or repaired product or part for ninety (90) days from shipment, or the remainder of the initial warranty period, whichever is longer.

SOFTWARE: *Action*tec Electronics warrants to Customer that each software program licensed from it will perform in substantial conformance to its program specifications, for a period of ninety (90) days from the date of purchase from *Action*tec Electronics or its authorized reseller. *Action*tec Electronics warrants the media containing software against failure during the warranty period. The only updates that will be provided are at the sole discretion of *Action*tec Electronics and will only be available for download at the *Action*tec website, www.*action*tec.com. *Action*tec Electronics' sole obligation under this express warranty shall be, at *Action*tec Electronics' option and expense, to refund the purchase price paid by Customer for any defective software product, or to replace any defective media with software which substantially conforms to applicable *Action*tec Electronics published specifications. Customer assumes responsibility for the selection of the appropriate applications program and associated reference materials. *Action*tec Electronics makes no warranty or representation that its software products will meet Customer's requirements or work in combination with any hardware or applications software products provided by third parties, that the operation of the software products will be uninterrupted or error free, or that all defects in the software products will be corrected. For any third-party products listed in the *Action*tec Electronics software product documentation or specifications as being compatible, *Action*tec Electronics will make reasonable efforts to provide compatibility, except where the non-compatibility is caused by a "bug" or defect in the third party's product or from use of the software product not in accordance with *Action*tec Electronics published specifications or User Guide.

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Return the product to:

In the United States
*Action*tec Electronics, Inc
760 North Mary Avenue
Sunnyvale, CA 94085

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DISPUTE RESOLUTION: The customer may contact the Director of Technical Support in the event the Customer is not satisfied with *Action*tec Electronics response to the complaint. In the event that the Customer is still not satisfied with the response of the Director of Technical Support, the Customer is instructed to contact the Director of Marketing. In the event that the Customer is still not satisfied with the response of the Director of Marketing, the Customer is instructed to contact the Chief Financial Officer and/or President.

GOVERNING LAW: This Limited Warranty shall be governed by the laws of the State of California, U.S.A. excluding its conflicts of laws principles and excluding the United Nations Convention on Contracts for the International Sale of Goods.